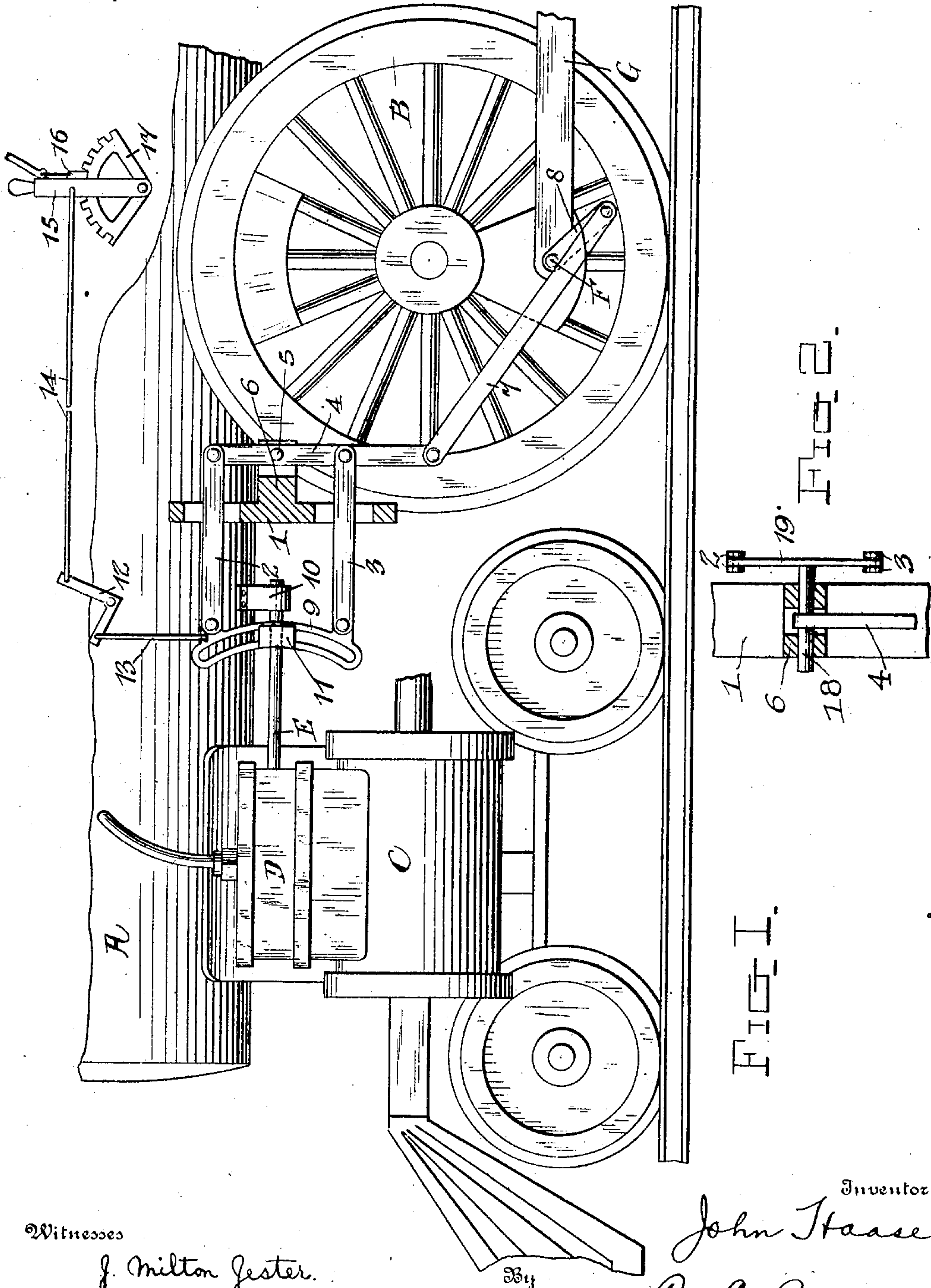


No. 882,247.

PATENTED MAR. 17, 1908.

J. HAASE.
VALVE GEAR.

APPLICATION FILED JULY 19, 1907.



Witnesses

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JOHN HAASE, OF FORT MADISON, IOWA.

VALVE-GEAR.

No. 882,247.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed July 19, 1907. Serial No. 384,587.

To all whom it may concern:

Be it known that I, JOHN HAASE, a citizen of the United States, residing at Fort Madison, in the county of Lee and State of Iowa, have invented certain new and useful Improvements in Valve-Gears, of which the following is a specification.

My invention relates to a valve gear for locomotives and particularly contemplates the provision of a simple and inexpensive structure which will be thoroughly capable of performing the function of the valve gears now in use.

My invention resides further in a provision, in combination within said valve gear of a novel adjustable element and novel means for adjusting the same to secure a longer or shorter stroke of the valve rod.

My invention further resides specifically in such features of construction, arrangement and operation as will be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section of my improved gear showing the same in operative connection with the locomotive, and Fig. 2 is a detail sectional view illustrating a slightly modified form of arrangement of parts to be hereinafter specifically referred to.

Referring to the accompanying drawings, A represents an engine having a driving wheel B, cylinder C and steam chest D within which projects the valve rod E carrying on its inner end, therein, a valve continuously operating to regulate the flow of steam within cylinder C. The driving wheel B is provided as usual with a main pin F from which extends the connecting rod G.

In the practical embodiment of my invention I provide a suitably mounted guide yoke 1 having openings there through adjacent its upper and lower end through which the rocker rods 2 and 3 are arranged, said rocker rods being pivotally connected at their rear ends to the rocker-arm 4, fulcrumed at 5, within a bearing arm 6, extending rearwardly from guide yoke 1, and between the pivotal connections of said rocker rods 2 and 3 thereto. The rocker-arm 4 is pivotally connected at its lower end to the connecting rod 7 having pivotal connection at its opposite end to a drag-link 8 which is loosely mounted upon the main pin F outside the engine connecting rod G. Thus the arm 4 is rocked upon its fulcrum 5 upon the rotation of the engine

wheel B by means of its connection therewith, said connection consisting of a drag-link 8, loosely, pivotally connected at its ends to the main pin F of said wheel B, and to the end of the connecting rod 7 respectively. The rocker rods 2 and 3 are pivotally connected at their forward end to a link 9 freely supported there between and movable thereby correspondingly with the rocker-arm 4.

According to my invention the valve rod E is secured through a block 11, slidably arranged within the link 9, and mounted within a stationary bearing 10 fixed to the engine A. Thus the link 9 must be adjusted up or down from the position shown in Fig. 1 before any reciprocatory movement of the valve rod E is had, said adjustment being rendered possible by virtue of the pivotal connection between said link 9 and the rocker rods 2 and 3 and between said rocker rods and the rocker-arm 4. To more readily provide for the adjustment of the link 9 and the stroke of the valve E, I provide a bell-crank-lever 12 suitably mounted upon a stationary portion of the locomotive A and connected at one of its legs to the link 9 by a rigid pivotally secured lever connecting rod 13. A reach rod 14 connects the other leg of said bell-crank lever 12 with an adjusting lever 15 having a latch 16 arranged therewith for engaging within the notched face of the quadrant 17 from which said lever works.

The quadrant 17 and adjusting lever 15 may be mounted upon a suitable portion of the locomotive, probably inside or just outside the cab. It will thus be seen that as the link 9 is adjusted up or down the stroke of the valve rod E will be proportionally increased to effect the desired result.

The modification shown in Fig. 2 illustrates a rocker-arm 4 having integral therewith a short shaft 18 arranged through bearing arms 6 of the guide yoke 1 and connected intermediate an oscillatory arm 19 from the reverse side of said guide yoke, said arm 19 having the rocker rods 2 and 3 pivotally secured at its upper and lower ends. Thus the oscillation of the rocker-arm 4 will be transmitted to the arm 19 through the integral shaft 18 to obtain the desired movement of the rocker rods 2 and 3 and link 9 as previously described.

Having thus fully described my invention, I claim:

In a locomotive valve gear, the combination with a valve rod secured through a block

adjacent one end, of a movable link within which said block is adjustably carried, a pivoted rocker arm, rocker rods extending parallel with one another at all times and
5 pivotally connecting the upper and lower ends of said link to said rocker arm above and below the pivot thereof, a connecting rod pivotally secured to the free end of said rocker arm and extending therefrom, and a
10 drag-link pivotally connected at one end to

the free end of said connecting rod and pivotally connected at its other end to the main pin of the locomotive driving wheel, substantially as described.

In testimony whereof I affix my signature 15
in presence of two witnesses.

JOHN HAASE.

Witnesses:

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ALICE HYDE.